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TITLE: Crosslinkable aqueous polyester emulsion and process for preparing the same

Brief Summary Paragraph Right (4):
In order to improve water-resistance and block resistance of an emulsion suitably for use in industrial surface coating and adhesive applications, a water dispersible sulfo-polyester and an acrylic resin blends are prepared. For example, U.S. Pat. Nos. 4,921,899, 5,218,032, and 5,294,650 disclose emulsion containing blends of water dispersible sulfo-polyester and acrylic resin, and the sulfo-polyester contains at least 12 mole percent of difunctional sulfomonomer. Since the blends of these emulsions contain a large amount of hydrophilic groups, these kinds of emulsions, after being formed into films, have poor water resistance.

Brief Summary Paragraph Right (15):
The sulfonate-containing compounds include compounds having a structural formula of Rb-SO.sub.3.sup.- M.sup.+ wherein R.sub.b is a diol, an diacid or an anhydride having 2-12 carbon atoms, and M.sup.+ is an alkali metal ion or an alkaline earth metal ion, such as Li.sup.+, Na.sup.+, K.sup.+, Mg.sup.+2, Ca.sup.+2. Examples of the above sulfonate-containing compounds include but are not limited to sodium salt of sulfoisophthalate (SSIPA), sodium salt of dimethyl 5-sulfoisophthalate (SSIPM), sodium of bis(2-hydroxy ethyl) 5-sulfoisophthalate, sodium salt of sulfoterephthalate, sodium salt of sulfo-succinate, sodium salt of sulfo-ethylene glycol, sodium salt of sulfopropylene glycol, sodium salt of sulfo-butylene diol, and the mixture thereof. The diacids component and

Brief Summary Paragraph Right (16):
their derivatives include but are not limited to terephthalic acid, isophthalic acid, 1,4-cyclohexanedicarboxylic acid, succinic acid, glutaric acid, adipic acid, sebacic acid, azelaic acid, dodecane dicarboxylic acid, 6H-p-phthalic acid, p-dimethyl phthalate, m-dimethyl phthalate, 2,6-naphthalene-dicarboxylic acid, and the mixture thereof. The diols component include but are not limited to ethylene glycol, propylene glycol, diehylene glycol, 1,4-cyclohexanediol, neopentyl glycol, 1,6-hexanediol, 1,4-cyclohexane dimethanol, and polyethylene ether glycol.

Detailed Description Paragraph Right (2):
A mixture of isophthalic acid (IPA), sodium salt of dimethyl 5-sulfoisophthalate (SSIPM), succinic acid (SA), diethyl glycol (DEG), neopentyl glycol (NPG), and catalyst titanium was charged to a four-neck reaction flask fitted with a stirrer, a distillator, a thermometer, a feeding inlet, and a nitrogen gas inlet, and heated with gentle stirring to over 175.degree. C. for esterification. Two hours after the water production ratio reached 95%, the reaction temperature was raised to about 275.degree. C. and the pressure was reduced to about 5 torr for polymerization for 1 hour. The reaction temperature was then lowered and nitrogen gas was introduced to the reaction flask to raise the pressure. When the reaction temperature was lowered to about 210.degree. C., trimellitic anhydride (TMA) was added for further reaction for 1.5 hours to give an aqueous polyester (A). The content of each components and the properties of the resulting aqueous polyester (A), such as acid number (AN) and intrinsic viscosity (IV), are shown in TABLE 1.